May 18, 2021

Good Morning General Herbert,

This inquiry is to see if the City of Ely Fire Station could receive funding either through a grant or from President Biden's Green Energy Program.

The history on my request is during Senator Reid's term, funding was received via the American Recovery and Reinvestment Act (ARRA) in the year 2010-2011 for the installation of thermal solar panels and necessary infrastructure for heating water via the sun to heat the fire stations "in floor" heating system in the 6,000 sq. foot truck bay along with hot water for the paid staff. Propane was and is still being used to heat the necessary hot water. History reflects the station uses between $7,000.00 to $9,000.00 per year in propane for heating purposes. High usage during the months of October through March.

The problem is the system started to fail within 1 year of going online. Johnson Controls from Salt Lake City was the company in charge of the installation. They had a capable individual in charge who was very knowledgeable in the system and how it was going to work. Unfortunately, this man was stricken with cancer and passed quickly, before the installation of the panels were started. Once completed, after a few months the fittings on the panels started to leak, releasing the glycol that was heated in the panels prior to being processed through the heat exchanger for creating hot water. The constant repairs over time became a financial hardship on the City's limited money, so the decision was made to disconnect the system. We have been told, but not confirmed, the panels which had residual glycol in them may be ruined because of the constant exposure to the sun most likely baked the fluid, thus ruining them. We believe the improper installation of the fittings, valves, and possible lack of a pressure relief system could have caused the failures.

Research was thoroughly checked into this type of system and it's intended use. Fire stations throughout the County were using solar panels for the same purpose. One fire station was in Fairbanks, Alaska was using a similar system. We thought that would be a good comparison for the temperature swing Ely goes through.

Additional funding via ARRA was also used for the installation of a group of Photo Voltaic panels to offset the cost of power for the fire station. Mt. Wheeler Power our local power supplier was quite interested in how this was going to work. They installed their own meters to check the effectiveness of the system and like the solar panel on the fire station it started to fail. In was discovered there were some bare wires during installation causing the failure. The wires were repaired but the system never functioned to its full capacity. I chatted with the General Manager of Mt. Wheeler Power, Kevin Robison, about the system. He indicated modern technology has improved the effectiveness of the Photo Voltaic systems. He added the system works but not at its full potential. Our Waste Water Treatment Plant (WWTP) is a high-power usage operation, $42,000.00 to $48,000.00 for power yearly. Kevin remarked installation of Photo Voltaic system could be a benefit to the City.

So, with all this being said, is this something we could check into? Repairs/replacement to the thermal panels on the fire station, update the Photo Voltaic system also and see if the installation of a system on the WWTP is possible.

I will send photos under another email for you to see. I will be happy to answer any questions you may have, if I can.

Thanks for your time!
Jim Alworth, City Council Member
36-year member Ely Volunteer Fire Dept.
24 years EMT